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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,934	02/27/2004	Yoichi Miyasaka	9319H-000697	6788
27572	7590	01/30/2009		
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303				
EXAMINER				
AHMED, SIAMIM				
ART UNIT		PAPER NUMBER		
1792				
MAIL DATE		DELIVERY MODE		
01/30/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/789,934

Applicant(s)

MIYASAKA, YOICHI

Examiner

Shamim Ahmed

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 11/11/08 have been fully considered but they are not persuasive. Applicant argues that Motoshi teaches detecting changes in the reflecting direction of light not only when the meniscus is in a pulled state but also when the meniscus surface is in a pushed state and therefore, Motoshi does not teach the limitation of picturing is only performed at a timing in which the meniscus surface is pulled state.

2. In response to the argument, examiner states that the argument is not persuasive because Motoshi teaches the detection is performed in both the pulled and pushed state of the meniscus surface in the nozzle as applicant acknowledged and therefore, Motoshi teaches more than the claimed limitation, which includes the detecting or picturing is performed---- in which the meniscus surface is pulled into an inside of the nozzle.

Therefore, the previous rejection is repeated herein as follows:

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motoshi (JP-10-044399) in view of Takeshi et al (JP 2000-334965 A).

Motoshi teaches a process for inspecting an ink jet head in which an ink hole can be detected easily, wherein the ink droplet is flowing through the head, which is oscillated by imparting an oscillation to a pipe for feeding the ink to the ink jet head (see the abstract).

Motoshi also teaches that enlarged image of the nozzle forming plane of the head is then picked up by means of a camera and vibration of the image of the nozzle, which resemble as the claimed "application of a driving waveform to the liquid droplet-ejection head" (see paragraphs 0007,0008 and 0031 of the translated version of the document).

Motoshi may not explicitly teach that the detection of the nozzle hole is performed with the application of a driving waveform that waveform causing single-period moicromotion of a meniscus surface of the nozzle hole.

However, Takeshi et al teach a nozzle forming member having good discharge characteristics at a narrow pitch and to form with a good manufacturing yield by forming different angles between an ink discharging direction and a tangential direction of an inner periphery of a nozzle hole at discharge and inflowing sides, and forming the hole having a site continuously changing at its angle and thus, a meniscus position of an ink droplet can be easily controlled, discharging characteristics and directivity can be easily controlled by a surface tension of a discharging surface and an edge effect of the discharge port end (see the abstract).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of claimed invention to employ Takeshi et al's teaching into Motoshi's teaching for easily controlling the meniscus position of the ink droplet as suggested by Takeshi et al.

As discusses above that the meniscus position of the droplet is easily controlled, so, it would have been obvious to generate a motion that causes pulling the meniscus surface as claimed.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shamim Ahmed whose telephone number is (571) 272-1457. The examiner can normally be reached on Tu-Fri (6:00-2:30) Every Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine G. Norton can be reached on (571) 272-1465. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Shamim Ahmed/
Primary Examiner, Art Unit 1792

SA